

2. (Amended) The method according to claim 1, further comprising the step of arranging said interface in a local exchange.

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Cmcd 15  
3. (Amended) The method according to claim 1, further comprising the step of taking said control data from signaling.

4. (Amended) The method according to claim 1, further comprising the step of taking said control data from RM cells of ABR traffic.

10 5. (Amended) The method according to claim 1, further comprising the step of taking said control data from the Internet protocol.

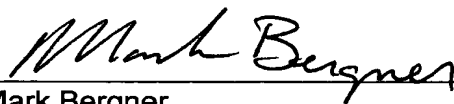
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**REMARKS**

15 The present Amendment revises the specification and claims to conform to United States patent practice, before examination of the present PCT application in the United States National Examination Phase. All of the changes are editorial and applicant believes no new matter is added thereby. The amendment of the claims is not intended to be a surrender of any of the subject matter of those claims.

Early examination on the merits is respectfully requested.

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APPENDIX A  
CLAIM MARK UPS

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original document : Q:\DOCUMENTS\YEAR 2000\P001920-SCHROEDER-  
TRANSMITTING INFORMATION\PRE COMPARE CLAIMS.DOC  
and revised document: Q:\DOCUMENTS\YEAR 2000\P001920-SCHROEDER-  
TRANSMITTING INFORMATION\AMENDED CLAIMS.DOC

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15 1. ~~[Method for the transmission of]~~**(Amended) A method transmitting**  
information in ~~[the]~~ a subscriber line area~~[, comprising]~~ with a subscriber line  
network ~~[via which information are transmitted]~~, **comprising the steps of:**  
20 **transmitting information via said subscriber line network** according to an  
xDSL method~~[, characterized in that]; and~~  
**supplying control data to** an interface ~~[is]~~ provided between ~~[the]~~ an  
application level and ~~[the]~~ a physical transmission~~[, control data]~~ with which an xDSL  
link can be dynamically reconfigured ~~[being supplied thereto by]~~ **by an evaluation of**  
protocols.

25 2. ~~[Method]~~**(Amended) The method** according to claim 1, ~~[characterized in~~  
~~that the interface is arranged in the]~~ **further comprising the step of arranging said**  
**interface in a local exchange.**

30 3. ~~[Method]~~**(Amended) The method** according to claim 1, ~~[2, characterized~~  
~~in that the control data are taken from the signalling.]~~ **further comprising the step**  
**of taking said control data from signaling.**

~~[4. Method according to claims 1, 2, characterized in that the control data are~~  
35 ~~taken from the RM cells of the ABR traffic.]~~ **4. (Amended) The method according**  
**to claim 1, further comprising the step of taking said control data from RM**  
**cells of ABR traffic.**



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5 and revised document: Q:\DOCUMENTS\YEAR 2000\P001920-SCHROEDER-TRANSMITTING INFORMATION\SUBSTITUTE SPECIFICATION.DOC

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## SPECIFICATION

### TITLE

METHOD FOR THE TRANSMISSION OF INFORMATION IN THE SUBSCRIBER  
15 LINE AREA

## BACKGROUND OF THE INVENTION

### Field of the Invention

20 The invention is directed to a method ~~[according to the preamble of patent claim 1.]~~ **for transmitting information in a subscriber line area with a subscriber line network.**

### Description of the Related Art

25 The transmission of information between a subscriber and the local exchange respectively allocated to the subscriber ~~[usually]~~ **generally** ensues via a subscriber line network that usually comprises a plurality of subscriber lines. In the ~~[Prior Art]~~ **prior art**, these are composed of traditional copper leads (a/b leads)~~[-~~  
~~The], and the~~ individual subscriber lines are ~~[thereby]~~ bundled and brought to the appertaining local exchange.

30 Only voice information ~~[were]~~ **had been** transmitted via the subscriber line network in the past~~[-~~~~whereby]~~; **however** the transmission of data and information of a different ~~[natures]~~ **nature** has been gaining in significance in recent years. ~~[Whereas the]~~ **The** transmission of voice information can be implemented with a relatively small bandwidth~~[-]~~**--far more bandwidth is required for the transmission of**  
35 **data. [However, separate networks had to be installed therefor.] And historically, the transmission of data required installation of separate networks.**

~~[The desire for future transmission purposes is therefore to also use~~  
]Future communications systems could advantageously make use of the  
subscriber line networks that already exist for the transmission of data and  
information of higher bit-rate services. However, separate transmission methods  
5 must be developed ~~[therefor]~~ **to implement this**. Such transmission methods ~~[are]~~  
**include**, for example, ~~[what are referred to as]~~ the xDSL (ADSL, HDSL, etc.)  
methods. The copper leads of the subscriber line network can thus be utilized up to  
transmission rates in the Mbit/s range on the basis of suitable transmission-oriented  
measures.

10 The ADSL transmission method is asymmetrically designed. This means  
that a higher bit rate can be selected in a privileged direction at the expense of a  
lower bit rate in the opposite direction. For example, up to 6 Mbit/s can be sent to  
the subscriber proceeding from the network and 2 Mbit/s can be sent from the  
subscriber to the network. The disadvantage of such a procedure is ~~[to be seen~~  
15 ~~therein]~~ that the privileged direction cannot be dynamically changed once it has been  
selected.

### SUMMARY OF THE INVENTION

The invention is based on the object of ~~[disclosing a way of how]~~  
20 **providing flexible control for** a bidirectional transmission between network and  
subscriber ~~[can be flexibly controlled]~~.

It is particularly advantageous in the invention that an interface is provided  
between the application level and the physical transmission to which control data are  
supplied by **an** evaluation of protocols. This involves the advantage that the  
25 privileged direction set by employing an xDSL method such as ~~[, for example,]~~ ADSL  
can be reconfigured by higher ~~[protocols.]~~ **level protocols**.

~~[Advantageous developments of the invention are recited in the~~  
~~subclaims.]~~ **In the invention, a method for transmitting information in a**  
**subscriber line area with a subscriber line network is provided, comprising the**  
30 **steps of transmitting information via said subscriber line network according to**  
**an xDSL method; and supplying control data to an interface provided between**

an application level and a physical transmission with which an xDSL link can be dynamically reconfigured by an evaluation of protocols.

Advantageous embodiments include arranging said interface in a local exchange. The control data may be taken from signaling, from RM cells of ABR traffic, or from the Internet protocol.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

The invention is explained in greater detail below on the basis of an exemplary embodiment.

~~{It}~~ **An interface** is provided ~~[in accord therewith to provide an interface]~~ between the application level and the physical transmission~~[-The interface should],~~ **which is** preferably ~~[be]~~ arranged in the local exchange. Control data are offered via this interface with which the privileged direction of the transmission method ADSL can be ~~[reconfigured. The]~~ **reconfigured**—this reconfiguration is ~~[thereby]~~ triggered by higher level protocols.

~~[Coming into consideration as higher]~~ **Higher level** protocols are **considered to be**, for example, the ~~[signalling,]~~ **signaling**, and/or the evaluation of resource management cells in ATM networks or ~~[IP= flow detection=]~~ **IP “flow detection”** mechanisms. When the evaluation of a higher protocol level yields the need for a change of the required bit rate in a specific direction, then the xDSL link is correspondingly reconfigured. The ~~[physics,]~~ **physical elements**, i.e., the copper leads, are thus always optimally adapted and utilized according to ~~[the]~~ need. ~~[Dependent]~~ **Depending** on the type of applied use, thus, the network-to-subscriber direction or the subscriber-to-network direction will have the higher bit rate on a case-by-case basis. Symmetrically divided bit rates are ~~[thereby]~~ also possible **with this implementation**.

In the case of the ~~[signalling, it is provided in]~~ **signaling**, ATM-based networks ~~[to request]~~ **provide for requesting** a specific transmission rate from the network with the ~~[signalling,]~~ **signaling**. These ~~[signalling]~~ **signaling** protocols allow the use of asymmetrical connections. When, for example, the case of a file download from a server is considered, then a higher transmission capacity is

required from the network toward the subscriber. When, in contrast, for example, a video telephony is requested, then, in particular, the same~~[, possibly high]~~ **(possibly high)** transmission capacity will be needed for both directions. In this example, the evaluation of the ~~[signalling]~~ **signaling** protocols automatically adapts the physical transmission rate.

In the case of transmission of information with ABR traffic, ~~[it is provided to interpret]~~ **the invention interprets** the RM cells in, for example, the local exchange.

Information about the traffic load of the network (congestion indication signals) are contained in the RM cells. A setting of the bandwidth via the interface between the application level and the physical transmission is undertaken with this information.

In the case of the transmission of information via the Internet, reconfigurations can be undertaken via IP ~~[=flow detection=]~~ **"flow detection"** mechanisms. It is likewise possible to set the bandwidth dependent on the employed protocol of the application layer.

The method disclosed here can be combined with known adaption methods (i.e., **an** automatic identification of the maximally possible transmission rate via existing leads). ~~[Further]~~ **Furthermore**, the basic idea presented here can also be expanded to other areas, for example, to transmission methods that are not line-bound.

~~[Abstract]~~ **The above-described method is illustrative of the principles of the present invention. Numerous modifications and adaptations thereof will be readily apparent to those skilled in this art without departing from the spirit and scope of the present invention.**

~~[METHOD FOR THE TRANSMISSION OF INFORMATION IN THE SUBSCRIBER~~  
~~LINE AREA]~~ **ABSTRACT**

Currently known transmission methods in the subscriber line area such  
as~~[, for example,]~~ xDSL do not allow a reconfiguration of the xDSL link once it has  
5 been undertaken. In order to achieve greater flexibility ~~[here, it is provided]~~ **in this**  
**regard, the invention provides** that the appertaining xDSL link be dynamically  
reconfigured by higher **level** protocols.